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TRENDS IN HARVEST OF MIGRATORY GAME BIRDS OTHER THAN WATERFOWL 1964-65 TO 1968-69



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UNITED STATES DEPARTMENT OF THE INTERIOR
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**TRENDS IN HARVEST OF MIGRATORY GAME BIRDS
OTHER THAN WATERFOWL
1964-65 TO 1968-69**

Compiled by

Duncan MacDonald and Elwood Martin
Migratory Bird Populations Station
Division of Wildlife Research



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TRENDS IN HARVEST OF MIGRATORY GAME BIRDS OTHER THAN WATERFOWL
1964-65 TO 1968-69

Abstract.--Responses to questions pertaining to harvest of migratory game birds other than waterfowl and coots included in the annual mail questionnaire survey of waterfowl hunters are summarized for the hunting seasons of 1964-65 through 1968-69. Results show an upward trend in hunting and harvest of other migratory game birds. This trend is correlated with an increase in duck stamp sales since 1965-66 but in general the increase in other migratory game bird hunting is greater. Analysis of these data demonstrates the weaknesses inherent in using a sampling frame based on duck stamp buyers to assess harvest and hunting of other migratory game birds.

INTRODUCTION

Since 1952, in order to determine harvest and hunting activities of waterfowl hunters, a questionnaire has been mailed to a selected number of hunters who purchased Federal Migratory Bird Hunting Stamps, commonly called duck stamps. Beginning with the 1964-65 hunting season, the questionnaire has also provided information on the harvest of migratory game birds other than waterfowl. In a section at the bottom of the postal card questionnaire the hunter is asked about migratory game birds other than waterfowl and coots, and is provided space for listing the number of each species harvested. Space is included for mourning doves, woodcock, snipe, sora, other rails, gallinules, band-tailed pigeons, white-winged doves, and cranes. An analysis of the information obtained during a 5-year period beginning with the 1964-65 hunting season forms the basis of this report.

LIMITATIONS OF THE DATA

There are biases inherent in a sampling frame based on duck stamp buyers. These include: (1) The sampling universe is Post Offices where duck stamps are sold rather than all stamp purchasers; (2) hunters under 16 years of age are excluded because they are not required to purchase a stamp to hunt waterfowl; (3) it is necessary that individual hunters voluntarily complete and send in a post card in order to be included in the sample; and (4) the location where a stamp is purchased may be different from a hunter's residence (Hansen and Hudgins, 1966).

An obvious bias with respect to species other than waterfowl is the fact that waterfowl hunters represent an unknown fraction of those who hunt these other species, a fraction which varies from area to area and year to year. In the Mourning Dove Status Report, 1966 (Ruos and Tomlinson, 1968), an attempt was made to use data from this survey, along with other information, to estimate the harvest of mourning doves by States and management units for the 1965-66 hunting season. The estimates obtained were better than those made previously, but the cumbersome techniques required dictate against the annual use of this method, particularly in view of the lack of precision obtained.

The information on the harvest of the nonwaterfowl species here presented is derived from the sample of duck stamp purchasers (consisting almost entirely of persons over 16 years of age and subsequently referred to as "adult waterfowl hunters"). The projected totals are only for the adult waterfowl hunter portion of all other migratory game bird (webless game bird) hunters. These data are presented for their value in indicating trends. It should be recognized that hunters of other migratory game birds who purchase duck stamps probably do not have the same success rate, nor do they have the same participation rate as those who do not buy duck stamps. For year-to-year comparisons we must assume that these differences remain proportionately the same in different years. It is also assumed that the proportion of other migratory game bird hunters who purchase duck stamps is relatively constant from year to year.

The data for the 1964-65 hunting season were calculated only for those who bought duck stamps and actually hunted waterfowl. Subsequently, data were analyzed for all potential adult waterfowl hunters (duck stamp sales less those bought for philatelic purposes). The 1964-65 data were made comparable by an adjustment which utilized the observed differences between active and inactive waterfowl hunters in the 1965-66 data. A simple percent correction was inappropriate, since active and inactive waterfowl hunters showed considerable differences in their activity related to other migratory game bird hunting. These differences involved both participation and success, so adjustments were made both in total hunters and in average season bag.

PROCEDURES

Questions on the form sent to hunters have varied somewhat in the 5 survey years. White-winged doves and band-tailed pigeons were not included on the questionnaires in the 1964-65 or 1965-66 seasons; barn-yard pigeons were included in the 1967-68 and 1968-69 surveys to reduce erroneous reporting of band-tailed pigeon harvest. In addition to direct changes related to other migratory game bird hunting, some changes

were made in the form pertaining to waterfowl harvest. Since they involved simplification, these changes are likely to have influenced the reporting of other migratory game bird hunting to a slight degree.

Data are summarized by the States where duck stamps were purchased, since information on location of harvest is not obtained. Consequently, harvest of a species reported by a hunter living in a State where the hunting season was closed was assumed to represent his legitimate harvest in a neighboring State where the season was open when this appeared to be reasonable. Although tabular presentations do not show harvest of any species in States where the hunting season was closed, probable legitimate harvest reported from "closed" States is included in management unit totals; however, these totals do not include the harvest of woodcock in Western Management Unit States, or the harvest of white-winged doves or band-tailed pigeons in any State where the hunting season was not open.

It is possible for a hunter to indicate on the questionnaire that he hunted other migratory game birds without indicating which species were hunted. In order to determine the number of duck stamp purchasers who hunted each of the webless species, the total number of respondents who indicated hunting each species was divided by the total of those who designated any species, and these proportions were applied to the projected total of other migratory game bird hunters. The latter figure was derived by taking the proportion of the total respondents who reported hunting other migratory game birds and applying that to the total of the potential adult waterfowl hunters. The 1965-66 data on total hunters, previously analyzed, were rounded to the nearest 10 hunters (tables 3 and 6-11).

FINDINGS

General trends

Table 1 shows that the number of waterfowl hunters hunting other migratory game birds has increased considerably over the 5-year period. Although this is explained in large measure by the concurrent increase in duck stamp sales, the data show that an increasing percentage of the waterfowl hunters are also hunting other migratory game birds. From 1964-65 to 1968-69, duck stamp sales increased 16.6 percent. Among waterfowl hunters, the number of other migratory game bird hunters increased 22.3 percent. Although this differential is influenced by the addition of white-winged dove and band-tailed pigeon to the questionnaire in 1966-67, such influence is assumed to be minimal considering that most whitewing and bandtail hunters probably also hunt mourning doves.

Table 2 shows these same trends by States. The change from a dove-hunting to a non-dove-hunting status in North Dakota in 1965, and the opposite change in South Dakota in 1967, are apparent in these data. This table also provides general information on the relative importance of waterfowl and other migratory game bird hunting. Particularly notable are New Mexico and Arizona, where a very high percentage of the waterfowl hunters also hunt other migratory game birds. It is obvious that the projected number of duck stamp purchasers who hunted these species represents widely varying proportions of the total of all hunters hunting these species.

Duck stamp purchasers who also hunt webless game birds are a sub-population of all webless game bird hunters. Although they cannot be considered truly representative of the total population of such hunters, the average season bag of this subpopulation relates more directly to the total population than do the projections of harvest or hunters. However, this information must also be considered basically to represent only the success rate of the subpopulation, and is most valid when used to indicate a trend.

When considering management unit and U.S. totals, it must be recognized that States with a relatively higher proportion of waterfowl hunters to total webless game bird hunters will carry a disproportionate weight. The percent of waterfowl hunters who also hunt webless species is only a rough indication of this disparity between States.

Mourning doves

Mourning dove hunters constituted the largest group among those who hunted other migratory game bird species. However, the bias associated with the sampling frame is readily apparent. For example, the number of mourning dove hunters in Alabama was calculated to be less than 20 percent of the number for Louisiana (table 6). In contrast, data for the 1965-66 season presented by Ruos and Tomlinson (1968) show that Alabama has more than 75 percent as many dove hunters as Louisiana. The discrepancy is easily understood as reflecting the relative importance of waterfowl hunting in the two States.

From 1964-65 to 1968-69, the increase in the projected number of dove hunters is 14.6 percent in the Eastern Management Unit, 17.7 percent in the Central Management Unit, and 13.3 percent in the Western Management Unit. There was a concurrent 18 percent increase in duck stamp sales in the Eastern Management Unit, an 18.1 percent increase in the Western Management Unit, and only a 13.9 percent increase in the Central Management Unit. This suggests that the interest in dove hunting is growing most rapidly in the Central Management Unit.

The Mourning Dove Status Report, 1966 (Ruos and Tomlinson, 1968) presents data which indicate that waterfowl hunters who hunt doves have slightly higher average season bags of mourning doves than do all dove hunters (duck hunters included). These data, derived from a special survey of hunters who reported taking banded mourning doves, indicate that waterfowl hunters in the Eastern Unit average 4 percent larger season bags, those in the Central Unit average 10 percent larger, and those in the Western Unit average 5 percent larger. If adjusted accordingly, the data presented on average season bag of doves can be considered a fair approximation of the average season bag of all dove hunters. The decrease in the average season bag in the Central Management Unit in 1967-68 can be attributed almost exclusively to the introduction of South Dakota data in that year. The data on average season bag in table 6 are remarkably consistent by State; this suggests that the sample size is probably adequate, at least to determine the average season bag of doves by waterfowl hunters. There appears to be a slight downward trend in the average season bag of mourning doves, and the increase in harvest indicated in table 4 can be attributed to an increase in dove hunters in the population.

Woodcock

As previously indicated, woodcock data from respondents who purchased duck stamps in States of the Western Management Unit were not included in the data summaries. The number of woodcock hunters among duck stamp purchasers increased 13.9 percent between 1964-65 and 1968-69; this is slightly less than the increase in duck stamp sales. Since the trend in the number of woodcock hunters indicated by this survey is roughly the same as the trend in duck stamp purchases, little can be inferred concerning the trend in all woodcock hunters.

There appears to be no significant trend in the average season bag of woodcock. Most of the States with a relatively large sample size appear to have mean reported bag sizes which are quite consistent from year to year (table 7).

Common snipe

There is evidence that interest in snipe hunting has significantly increased in the Western Management Unit (table 8). The number of snipe hunters in this Unit increased more than 50 percent from 1964-65 to 1968-69, while duck stamp sales increased only 18.1 percent. The projected harvest of snipe by waterfowl hunters increased more than 57 percent. The greater part of this increase can be attributed to an increase in hunters, but increasing hunter success also played a part.

The snipe harvest for Alaska is shown separately (table 14). There is no apparent trend in average season bag or harvest. However,

the increase in snipe hunters from 1967-68 to 1968-69 is proportionally much greater than the corresponding increase in waterfowl hunters, and this may indicate a growing interest in snipe hunting in Alaska. It should be noted that many of the duck stamp purchasers in Alaska are in the military service, and hence quite mobile. Some of the harvest of other migratory game birds indicated by those who purchased duck stamps in Alaska may have occurred in the lower 48 States, as is indicated by reported harvest of mourning doves and woodcock by Alaska hunters.

Rails and gallinules

It is obvious that the small number of rail and gallinule hunters contacted in the survey results in large sampling error and consequently imprecise data. Probably the most valuable information presented here is the identification of the States where hunting of these species is relatively important (tables 9-11). Louisiana, Florida, and New Jersey stand out as important rail-hunting States, particularly in the case of "other rail" hunting, which certainly involves mainly clapper rails (soras are the only rails specifically identified on the questionnaire). Sora hunting is of some importance in a few interior States, but hunting for all species of rails appears to be concentrated along the east coast from Maryland south, and in Louisiana.

To judge from the data in table 11, gallinule hunting is even more local than rail hunting. In only four States did the projected number of gallinule hunters exceed 100 for all five hunting seasons reported. These were Florida, Louisiana, New Jersey, and California. The large number of instances where few or no responses were received is indicative of the inadequacy of this sampling frame for contacting hunters of minor species and determining their harvest of these species.

White-winged doves

No information was requested for white-winged doves on the questionnaires prior to the 1966-67 survey. The number of respondents who reported hunting white-winged doves from States where the season was closed suggests a large reporting bias. Although it is certain that some hunters from States adjacent to whitewing-hunting States did hunt whitewings, it is not possible to determine the proportion of erroneous responses in the sample. Thus, only the data from States with open seasons on white-winged doves are included in this report. Since it is known that a large number of California hunters come to Arizona for whitewing hunting, it is likely that a considerable part of the harvest indicated for California actually occurred in Arizona. The considerably larger number of hunters in California over that in Arizona is at least partially a reflection of the relative importance of waterfowl hunting in the two States. Although 3 years is too short a period to establish trends, the average season bag of whitewings appears to have declined, particularly in Texas (table 12).

Band-tailed pigeons

As with whitewings, no data were requested for band-tailed pigeon hunting until the 1966-67 survey. Also, the number of persons who reported hunting bandtails far from the range of the species suggests considerable reporting bias. The reported hunting activity almost certainly was directed at feral rock doves rather than bandtails. Thus, data are included in this report only from States with an open season on bandtails. Average season bag appears to be quite similar in the three Pacific Coast hunting States and to vary little between years (table 13). However, a longer series of data would be required to properly assess trends in harvest of the Pacific bandtail population through the medium of the waterfowl questionnaire survey.

The 1968-69 questionnaire survey provides data from the experimental season on band-tailed pigeons in New Mexico and Arizona. These can be compared with intensive surveys made of all permit holders in the two States (Brown, 1969, and Sands, 1968). It is interesting to note that the projected number of hunters for the two States combined was 696 from the nationwide waterfowl questionnaire survey, and 1,129 from the intensive survey. Considering that many of the bandtail hunters probably did not purchase duck stamps, this would appear to be a reasonably accurate projection. The major disparity comes in the average season bag. Table 13 shows 2.28 birds for New Mexico and 3.68 for Arizona. The intensive local survey showed 1.8 birds for New Mexico and 2.5 for Arizona. This difference reflects a tendency towards less exaggeration in the intensive local survey and/or a real difference in success between duck stamp purchasers and those who did not purchase duck stamps.

Little brown cranes

Data on the harvest of little brown cranes (lesser sandhill cranes) are limited. Hunting was allowed throughout this reporting period in Alaska, New Mexico, and Texas. An open season was initiated in Colorado for the 1966-67 season and in North and South Dakota for the 1968-69 season. A question on crane harvest has been included in the questionnaire survey for Alaska since 1966-67, for Texas since 1967-68, and for all crane-hunting States beginning in 1968-69. Responses to the survey have not as yet provided data sufficient to demonstrate trends in harvest (table 15). It is interesting to note that in Colorado for the 1968-69 season no successful crane hunters responded, and no crane hunters at all responded in South Dakota. (See comments under Rails and gallinules, above.)

DISCUSSION

The total harvest and hunter participation estimates presented in this report have distinct limitations, and these have been noted throughout the report. When allowances are made for all recognized biases, some general conclusions concerning the nature of the harvest of migratory game birds other than waterfowl can be drawn. Hunter interest in these game birds is certainly increasing, and possibly at a greater rate than the limited sampling frame would suggest. Snipe hunting is rapidly expanding in the western States. Rail hunting is concentrated in, but not limited to, certain eastern and Gulf Coast States. Interest in dove hunting is increasing somewhat faster in the Central Management Unit than in the other two units. States with no harvest survey for migratory game birds other than waterfowl can derive a very general approximation of the harvest of these birds within their boundaries and of hunter interest in these species. However, the most obvious conclusion is that a better sampling frame for measuring the harvest of migratory game birds other than waterfowl is needed.

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TABLES

Table 1.--Potential adult waterfowl hunters, projected numbers who hunted other migratory game birds, and the percent of other migratory game bird hunters among adult waterfowl hunters

<u>Management Unit</u>	<u>1964-65</u>	<u>1965-66</u>	<u>1966-67</u>	<u>1967-68</u>	<u>1968-69</u>
<u>Eastern</u>					
Waterfowl hunters	702,328	704,527	808,008	869,936	828,543
OMGB* hunters	245,456	230,151	267,698	296,158	288,700
Percent	34.9	32.7	33.1	34.2	34.8
<u>Central</u>					
Waterfowl hunters	530,362	501,733	607,490	681,185	604,070
OMGB hunters	123,278	106,046	129,571	168,462	157,143
Percent	23.2	21.5	21.3	24.7	26.0
<u>Western</u>					
Waterfowl hunters	309,808	317,362	348,661	353,279	365,921
OMGB hunters	107,972	107,039	133,884	137,005	137,339
Percent	34.8	33.7	38.4	38.8	37.5
<u>Total United States</u>					
Waterfowl hunters	1,542,558	1,523,667	1,764,159	1,904,400	1,798,534
OMGB hunters	476,706	443,236	531,153	601,625	583,182
Percent	30.9	29.3	30.1	31.6	32.4

*Other Migratory Game Bird

Table 2.-Number and percent of adult waterfowl hunters hunting other migratory game birds by States,
1964-65 through 1968-69

State	Number			Percent						
	1964-65	1965-66	1966-67	1967-68	1968-69	1964-65	1965-66	1966-67	1967-68	1968-69
Alabama	7,933	6,840	9,137	9,936	7,555	57.4	54.1	59.0	60.8	54.2
Connecticut	3,356	3,613	3,604	4,023	4,751	43.9	46.0	38.6	43.5	41.3
Delaware	3,158	3,046	2,894	3,625	4,313	40.8	36.8	32.1	37.6	39.3
Florida	13,006	13,770	15,803	17,459	15,461	50.3	55.9	56.5	58.1	57.5
Georgia	4,370	5,854	6,479	6,976	6,952	56.8	61.9	62.8	65.2	62.2
Illinois	15,670	14,206	17,686	22,652	19,577	29.7	25.6	27.1	30.3	33.6
Indiana	2,043	1,700	2,064	1,990	2,635	12.3	10.0	10.6	8.9	12.2
Kentucky	3,763	3,148	4,023	4,524	3,540	52.8	44.9	48.2	49.4	47.2
Louisiana	40,363	32,600	49,032	46,487	38,204	46.9	40.2	46.8	42.8	42.5
Maine	3,157	3,603	4,230	4,068	5,602	29.0	30.3	31.7	31.1	38.5
Maryland + D.C.	8,129	8,474	9,070	9,708	10,768	31.4	32.3	31.2	30.7	33.8
Massachusetts	6,041	7,593	6,952	6,300	8,500	34.3	38.3	31.2	30.3	36.5
Michigan	25,099	21,516	21,674	23,602	20,375	31.9	28.9	25.7	24.9	23.2
Mississippi	9,302	7,796	10,259	12,152	9,578	57.6	58.7	55.4	60.8	56.4
New Hampshire	1,664	2,233	2,166	2,350	2,633	35.5	38.6	33.6	35.6	34.7
New Jersey	5,180	5,516	6,340	6,964	7,598	23.6	21.3	24.1	24.6	25.7
New York	12,997	15,801	17,163	22,162	25,112	24.4	28.0	26.1	29.0	29.7
North Carolina	12,448	12,530	14,727	13,161	12,938	53.4	57.7	59.6	59.0	59.1
Ohio	5,700	3,954	3,550	4,396	4,634	22.9	15.5	11.7	14.9	16.4
Pennsylvania	12,719	15,437	15,236	20,664	24,442	34.0	37.4	35.6	40.2	42.9
Rhode Island	558	665	747	830	899	25.4	31.6	30.6	33.5	30.9
South Carolina	7,584	9,157	10,415	10,765	12,053	58.4	61.8	63.3	59.5	64.1
Tennessee	11,312	7,905	10,891	11,577	11,069	52.5	47.9	45.9	46.7	50.6
Vermont	1,036	891	1,666	1,444	1,632	24.8	18.9	33.5	25.6	27.9
Virginia	8,839	7,498	8,214	9,822	9,790	53.7	48.8	45.8	52.2	55.0
West Virginia	509	378	359	589	471	41.2	23.7	31.2	26.8	26.8
Wisconsin	19,520	14,427	13,317	17,932	17,618	18.8	13.8	12.4	16.4	16.9
East. Mgmt. Unit	245,456	230,151	267,698	296,158	288,700	34.9	32.7	33.1	34.2	34.8

See footnotes at end of table, p. 12

Table 2.--Number and percent of adult waterfowl hunters hunting other migratory game birds by States,
1964-65 through 1968-69 (continued)

State	Number				Percent					
	1964-65 ^{1/}	1965-66	1966-67	1967-68	1968-69	1964-65 ^{1/}	1965-66	1966-67	1967-68	1968-69
Arkansas	11,156	6,505	7,670	11,089	9,278	32.1	29.8	21.7	29.4	31.6
Colorado	8,325	5,574	9,187	9,422	7,912	31.9	26.2	30.3	29.5	24.9
Iowa	1,859	1,275	1,634	2,591	5,124	5.0	3.2	3.5	5.0	11.3
Kansas	15,748	15,147	18,609	22,244	22,273	57.0	46.9	53.5	46.8	50.3
Minnesota	7,287	4,717	5,192	13,753	11,578	5.7	3.8	3.5	8.8	8.3
Missouri	14,818	13,219	13,635	15,776	15,058	38.8	36.2	33.8	30.6	36.0
Montana	270	337	328	297	716	1.3	1.5	1.2	1.2	2.8
Nebraska	1,482	1,069	1,044	1,649	1,666	5.2	4.4	3.3	4.1	4.9
New Mexico ⁰	3,649	3,025	3,518	3,460	3,564	71.7	68.0	63.1	57.1	55.8
North Dakota ^{2/}	6,408	961	551	1,562	2,725	16.4	3.2	1.4	3.9	6.9
Oklahoma	10,188	10,401	11,210	15,822	11,588	47.0	49.9	43.8	48.4	46.1
South Dakota ^{3/}	437	592	383	9,068	10,321	1.3	2.3	1.1	21.8	27.0
Texas	41,527	43,109	56,438	61,495	55,044	50.1	49.2	56.6	55.5	58.1
Wyoming	124	115	172	234	296	2.2	3.6	3.1	3.7	3.9
Cent. Mgmt. Unit	123,278	106,046	129,571	168,462	157,143	23.2	21.5	21.3	24.7	26.0
Arizona	4,579	4,158	5,840	6,407	6,126	55.1	53.8	67.7	62.5	60.5
California	60,355	60,125	71,619	72,590	71,228	45.1	42.9	47.5	48.0	44.5
Idaho	6,155	6,137	6,912	7,685	8,256	24.5	25.4	26.9	28.2	28.2
Nevada	4,182	4,520	4,844	5,434	5,351	43.4	42.4	40.7	42.8	43.0
Oregon	10,331	9,986	12,759	16,056	15,084	23.8	22.6	26.2	33.4	31.3
Utah	8,389	8,869	12,505	14,078	11,963	32.8	35.0	38.2	43.9	35.5
Washington	13,981	13,244	19,405	14,755	19,331	21.9	20.3	28.3	21.0	26.8
West. Mgmt. Unit	107,972	107,039	133,884	137,005	137,339	34.8	33.7	38.4	38.8	37.5
U.S. TOTAL	476,706	443,236	531,153	601,625	583,182	30.9	29.3	30.1	31.6	32.4

^{1/}Adjusted to total adult waterfowl hunters from Active waterfowl hunters using 1965-66 comparable data.

^{2/}Dove Hunting State in 1964-65.

^{3/}Dove Hunting State in 1967-68 and 1968-69.

Table 3.--Number of adult waterfowl hunters hunting other migratory game birds, by species, 1964-65 through 1968-69

Species	Eastern Management Unit					Central Management Unit				
	1964-65	1965-66	1966-67	1967-68	1968-69	1964-65	1965-66	1966-67	1967-68	1968-69
Mourning doves	150,130	137,860	169,164	180,326	172,007	113,115	97,810	119,845	146,801	133,149
Woodcock	108,276	106,020	120,641	127,313	126,856	9,985	6,480	4,876	11,524	7,831
Sora	4,767	4,100	4,160	4,659	2,920	1,086	960	894	978	931
Other rails	6,868	5,020	5,557	10,415	9,283	1,121	870	779	596	1,228
Gallinules	3,230	2,750	2,278	2,715	1,703	342	630	201	678	377
White-winged doves	-- 1/	--	--	--	--	--	--	11,778	10,391	9,407
Band-tailed pigeons	--	--	--	--	--	--	--	--	--	2/
Common snipe	36,153	28,900	32,531	40,203	34,888	10,450	8,590	8,943	13,250	11,320
Western Management Unit										
Species	1964-65	1965-66	1966-67	1967-68	1968-69	1964-65	1965-66	1966-67	1967-68	1968-69
	x 3/	x	x	x	x	118,261	112,500	125,517	138,837	134,687
Mourning doves	105,063	104,040	114,886	119,738	118,995	368,308	339,710	403,895	446,865	424,151
Woodcock	472	500	154	218	107	6,325	5,560	5,208	5,855	3,958
Sora	424	460	123	455	323	8,413	6,350	6,459	11,466	10,834
Other rails										
Gallinules	249	470	402	800	456	3,821	3,850	2,881	4,193	2,538
White-winged doves	--	--	14,983	16,029	12,064	--	--	26,761	26,420	21,471
Band-tailed pigeons	--	--	26,557	23,444	25,565	--	--	26,557	23,444	25,565
Common snipe	9,004	9,730	9,233	12,393	13,517	55,607	47,220	50,707	65,846	59,725

1/ "—" = No data.

2/ New Mexico band-tailed pigeon hunters included in Western Management Unit.

3/ "x" = No open season.

Table 4.—Total harvest of other migratory game birds by adult waterfowl hunters, by species, 1964-65 through 1968-69 (In thousands)

Species	Eastern Management Unit					Central Management Unit				
	1964-65	1965-66	1966-67	1967-68	1968-69	1964-65	1965-66	1966-67	1967-68	1968-69
Mourning doves	4,151.6	3,826.5	4,993.5	4,977.7	4,426.0	2,728.8	2,781.8	3,342.4	3,830.7	2,762.9
Woodcock	438.9	366.0	422.0	460.0	461.8	29.7	14.9	14.0	36.4	18.2
Sora	33.0	25.6	34.1	22.4	11.6	7.6	4.7	2.7	6.5	3.2
Other rails	40.1	26.1	49.3	95.8	68.5	4.0	2.1	3.0	1.5	3.4
Gallinules	21.0	17.6	15.1	17.2	6.2	1.3	1.2	0.5	1.8	2.0
White-winged doves	-- 1/	--	--	--	--	--	--	236.3	194.5	126.3
Band-tailed pigeons	--	--	--	--	--	--	--	--	--	2/
Common snipe	272.5	171.1	190.6	246.8	204.1	59.9	39.6	38.4	56.6	54.7
 Western Management Unit										
Species	1964-65	1965-66	1966-67	1967-68	1968-69	1964-65	1965-66	1966-67	1967-68	1968-69
	x3/	x	x	x	x	2,185.7	2,114.2	2,290.8	2,433.1	2,264.5
Mourning doves						9,066.1	8,722.5	10,626.7	11,241.4	9,453.4
Woodcock	0.3	0.9	0.6	0.6	0.3	468.6	380.9	436.2	496.0	479.9
Sora	0.5	0.8	0.3	2.0	0.3	40.9	31.2	37.5	29.5	15.0
Other rails	1.1	1.6	1.9	3.9	2.2	44.5	29.0	52.7	99.4	72.2
Gallinules						23.4	20.4	17.5	23.0	10.4
White-winged doves	--	--	246.2	318.8	191.9	--	--	482.5	513.3	318.3
Band-tailed pigeons	--	--	227.8	198.1	225.7	--	--	227.8	198.1	225.7
Common snipe	52.5	53.2	54.6	88.8	82.6	385.0	263.9	283.6	392.3	341.4

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1/ "—" = No data.

2/ New Mexico band-tailed pigeon harvest included in Western Management Unit total.

3/ "x" = No open season.

Table 5.--Average season bag of other migratory game birds by adult waterfowl hunters, 1964-65 through 1968-69

Species	Eastern Management Unit					Central Management Unit				
	1964-65	1965-66	1966-67	1967-68	1968-69	1964-65	1965-66	1966-67	1967-68	1968-69
Mourning doves	27.65	27.76	29.47	27.47	25.59	24.12	28.44	27.90	26.02	20.70
Woodcock	4.05	3.45	3.50	3.61	3.64	2.97	2.30	2.87	3.16	2.32
Sora	6.92	6.24	8.20	4.81	3.98	7.00	2.19	3.07	6.61	3.40
Other rails	5.84	5.20	8.88	9.20	7.38	3.38	2.41	3.84	2.54	2.75
Gallinules	6.50	6.40	6.64	6.34	3.63	3.74	1.90	2.57	2.72	5.33
White-winged doves	--	1/	--	--	--	--	--	19.23	18.72	13.43
Band-tailed pigeons	--	--	--	--	--	--	--	--	--	2/
Common snipe	7.54	5.92	5.86	6.14	5.85	5.74	4.61	4.29	4.27	4.83
Western Management Unit										
Species	1964-65	1965-66	1966-67	1967-68	1968-69	1964-65	1965-66	1966-67	1967-68	1968-69
	20.80	20.32	19.94	20.32	19.03	24.62	25.68	26.62	25.40	22.45
Mourning doves	x ^{3/}	x	x	x	x	3.96	3.38	3.48	3.59	3.59
Woodcock	0.57	1.80	4.00	2.75	2.50	6.46	5.61	7.36	4.96	3.86
Sora	1.12	1.74	2.75	4.50	0.88	5.29	4.57	8.28	8.77	6.83
Other rails	4.34	3.40	4.69	4.88	4.80	6.11	5.30	6.17	5.62	3.97
Gallinules	--	--	16.43	19.89	15.91	--	--	17.37	19.36	15.06
White-winged doves	--	--	8.58	8.45	8.90	--	--	8.58	8.45	8.83
Band-tailed pigeons	--	--	5.92	5.99	6.11	6.92	5.59	5.63	5.99	5.73
Common snipe	5.83	5.47	5.92	5.99	6.11					

1/ "----" = No data.

2/ New Mexico band-tailed pigeon harvest included in Western Management Unit total.

3/ "x" = No open season.

Table 6.--Number of hunters and average season bag of adult waterfowl hunters hunting mourning doves 1964-65 through 1968-69^{1/}

State	Hunters				Average Season Bag					
	1964-65	1965-66	1966-67	1967-68	1968-69	1964-65	1965-66	1966-67	1967-68	1968-69
Alabama	7,702	6,590	8,366	9,279	6,657	*46.44	41.36	43.48	37.10	38.32
Delaware	3,080	2,890	2,647	3,374	3,779	20.31	12.21	14.63	11.57	15.01
Florida	12,012	12,640	13,899	15,497	13,746	*39.68	29.08	29.98	31.11	29.02
Georgia	4,183	5,600	5,687	6,224	6,322	38.57	35.20	37.90	40.39	42.49
Illinois	15,141	13,590	16,724	21,771	17,732	*17.87	15.19	22.29	22.54	21.28
Kentucky	3,685	3,120	3,783	4,316	3,327	*35.90	40.16	50.18	41.18	38.68
Louisiana	35,533	28,620	43,800	39,546	32,813	*25.23	26.87	28.78	29.48	22.10
Maryland + D.C.	7,687	7,940	8,372	8,741	9,782	17.59	14.81	19.62	15.16	16.68
Mississippi	8,960	7,590	9,713	11,662	9,178	*40.71	42.78	41.36	39.90	38.21
North Carolina	12,285	12,240	14,110	12,690	12,379	*30.63	32.44	35.18	35.06	37.19
Pennsylvania	9,059	9,450	11,401	13,279	18,962	*12.65	11.20	14.38	10.83	11.64
Rhode Island	212	380	397	527	716	6.75	12.10	12.59	14.92	18.36
South Carolina	7,178	8,760	9,726	9,910	11,325	*27.93	44.69	43.05	33.48	37.35
Tennessee	11,256	7,860	10,553	11,369	10,804	*30.67	33.17	33.07	37.15	37.13
Virginia	8,391	7,060	7,636	9,307	9,404	*25.01	27.90	27.62	25.47	27.17
West Virginia	461	220	269	.442	357	9.40	10.00	12.47	10.52	11.44
East. Mgmt. Unit	150,130	137,860	169,164	180,326	172,007	27.65	27.76	29.47	27.47	25.59
Arkansas	10,590	6,170	6,903	10,442	8,741	*25.04	25.33	24.57	27.41	37.82
Colorado	8,304	5,510	9,090	9,402	7,890	16.19	13.74	16.03	15.37	13.46
Kansas	15,680	15,140	18,497	21,897	22,034	*20.46	19.80	23.04	20.38	23.02
Missouri	14,480	12,830	13,265	15,098	14,668	20.60	19.67	24.44	20.39	19.44
New Mexico	3,379	3,010	3,379	3,320	3,295	29.23	32.72	31.42	31.97	27.94
North Dakota	7,445	x 2/	x	x	x	7.95	x	x	x	x
Oklahoma	10,118	10,400	10,748	15,227	11,236	*26.82	29.23	30.00	29.48	28.77
South Dakota	x	x	x	9,068	9,637	x	x	12.44	15.67	
Texas	40,881	42,900	55,309	59,214	52,897	30.30	36.60	40.51	36.13	34.00
Cent. Mgmt. Unit	113,115	97,810	119,845	146,801	133,149	24.12	28.44	27.90	26.02	20.70

Table 6.--Number of hunters and average season bag of adult waterfowl hunters hunting mourning doves 1964-65 through 1968-69^{1/} (continued)

<u>State</u>	Hunters				Average Season Bag					
	<u>1964-65</u>	<u>1965-66</u>	<u>1966-67</u>	<u>1967-68</u>	<u>1968-69</u>	<u>1964-65</u>	<u>1965-66</u>	<u>1966-67</u>	<u>1967-68</u>	<u>1968-69</u>
Arizona	4,579	4,140	5,731	6,137	5,913	*24.31	37.75	40.88	37.82	40.62
California	59,126	59,300	65,732	66,434	65,380	*22.88	23.60	22.62	23.59	19.93
Idaho	6,134	6,140	6,791	7,463	8,048	14.71	12.77	14.19	15.16	14.45
Nevada	4,121	4,460	4,686	5,202	5,235	18.82	19.84	20.21	20.19	17.32
Oregon	9,878	9,760	9,166	11,941	11,556	*14.56	13.14	14.16	14.47	11.96
Utah	8,299	8,710	12,227	13,926	11,748	12.48	11.22	12.83	13.73	10.87
Washington	12,926	11,530	11,470	8,635	11,050	*17.32	14.34	14.98	14.80	16.33
West. Mgmt. Unit	105,063	104,040	114,886	119,738	118,995	20.80	20.32	19.94	20.32	19.03
Total U.S.	368,308	339,710	403,895	446,865	424,151	24.62	25.68	26.62	25.40	22.45

1/ Only data for States with open hunting seasons are shown, but data from all States are included in Unit totals.

2/ "X" = No open season.

* = Adjusted using differences between active and inactive waterfowl hunters in 1965-66.

Table 7.-Number of hunters and average season bag of adult waterfowl hunters hunting woodcock, 1964-65 through 1968-69¹

State	Hunters				Average Season Bag					
	1964-65	1965-66	1966-67	1967-68	1968-69	1964-65	1965-66	1966-67	1967-68	1968-69
Alabama	799	760	1,424	1,276	1,571	2.84	2.24	3.83	4.19	2.62
Connecticut	3,228	3,550	3,388	3,885	4,448	*3.93	4.59	3.88	3.16	3.54
Delaware	694	750	829	707	1,162	2.78	2.67	2.67	2.57	3.37
Florida	786	1,190	1,331	1,268	1,605	3.62	3.11	2.71	3.27	3.80
Georgia	719	820	820	1,295	1,429	3.72	3.17	3.21	3.66	4.36
Illinois	1,344	1,410	1,454	1,792	1,372	*3.40	2.41	2.88	2.39	1.59
Indiana	1,495	1,190	1,387	1,564	1,442	*3.53	2.44	3.00	3.20	2.79
Kentucky	268	220	351	260	292	*3.05	2.27	2.00	2.70	2.36
Louisiana	9,706	7,390	11,112	11,148	9,929	*7.74	4.37	4.93	5.94	7.79
Maine	3,061	3,560	4,115	4,018	5,521	*9.11	6.80	6.17	6.93	6.89
Maryland + D.C.	1,560	1,670	1,684	2,337	2,744	2.27	2.04	2.62	3.37	3.43
Massachusetts	5,822	7,410	6,787	6,220	8,038	*3.32	3.80	3.69	3.35	3.72
Michigan	23,954	20,890	20,480	22,316	18,044	*3.95	3.02	3.36	3.31	2.39
Mississippi	1,211	810	1,337	1,702	847	5.62	4.02	3.41	4.22	7.47
New Hampshire	1,603	2,190	2,128	2,274	2,612	*4.38	5.16	4.46	3.62	5.93
New Jersey	3,628	4,120	4,525	5,229	5,927	3.27	3.30	3.16	4.00	4.26
New York	12,699	15,320	16,712	21,089	22,397	*3.12	2.89	2.96	3.67	3.49
North Carolina	1,675	1,310	2,169	1,840	2,179	*4.32	4.27	4.17	4.70	4.75
Ohio	5,147	3,400	2,958	3,660	3,622	*3.42	3.85	3.34	2.79	4.35
Pennsylvania	7,186	10,470	7,688	13,597	12,304	2.76	2.83	2.43	2.97	2.59
Rhode Island	396	430	492	420	482	1.42	3.26	3.31	4.19	4.39
South Carolina	1,280	1,120	1,165	1,204	2,448	6.89	2.77	2.78	3.84	3.66
Tennessee	284	420	676	866	570	1.64	2.14	1.81	1.88	4.92
Vermont	956	880	1,608	1,374	1,577	*4.39	3.86	4.47	6.66	2.89
Virginia	1,048	990	843	1,471	1,209	*2.49	2.52	4.00	2.77	3.66
West Virginia	95	200	197	304	314	*2.33	3.00	2.09	3.09	3.86
Wisconsin	17,632	13,550	11,730	14,197	12,394	*3.32	3.62	3.09	2.93	2.30
East. Mgmt. Unit	108,276	106,020	120,641	127,313	126,856	4.05	3.45	3.50	3.61	3.64

Table 7.--Number of hunters and average season bag of adult waterfowl hunters hunting woodcock, 1964-65 through 1968-69^{1/} (continued)

State	Hunters				Average Season Bag					
	1964-65	1965-66	1966-67	1967-68	1968-69	1964-65	1965-66	1966-67	1967-68	1968-69
Arkansas	1,352	940	639	1,561	964	3.00	3.94	4.20	4.07	3.50
Kansas	317	150	245	347	472	1.67	2.00	1.09	0.80	1.36
Minnesota	4,447	2,570	2,932	5,856	3,828	2.50	1.98	3.42	2.92	2.12
Missouri	1,204	1,180	934	1,150	776	*2.41	2.29	2.62	2.82	2.14
Oklahoma	225	80	192	476	383	1.83	1.25	2.00	6.40	1.54
Texas	1,550	900	1,578	1,439	892	5.47	2.44	3.38	1.66	3.20
Wyoming	x 2/	x	x	22	74	x	x	x	5.00	3.33
Cent. Mgmt. Unit	9,985	6,480	4,876	11,524	7,831	2.97	2.30	2.87	3.16	2.32
Total U.S.	118,261	112,500	125,517	138,837	134,687	3.96	3.38	3.48	3.59	3.59

1/ Only data for States with open hunting seasons are shown, but data from all Eastern and Central Management Unit States are included in Unit totals.

2/ "x" = No open season.

* Adjusted using differences between active and inactive waterfowl hunters in 1965-66.

Table 8.--Number of hunters and average season bag of adult waterfowl hunters hunting common snipe,
1964-65 through 1968-69²

State	Hunters			Average Season Bag					
	1964-65	1965-66	1966-67	1967-68	1968-69	1965-66	1966-67	1967-68	1968-69
Alabama	1,110	790	1,542	1,160	1,346	*6.20	4.05	5.79	5.59
Connecticut	162	130	159	162	285	4.63	3.08	2.71	3.31
Delaware	401	240	247	137	315	3.00	5.00	4.88	2.50
Florida	4,504	4,680	5,281	6,262	6,166	*16.11	9.53	11.53	11.03
Georgia	632	540	877	836	1,113	5.13	3.33	5.71	4.05
Illinois	853	770	1,262	1,350	744	4.00	3.64	3.79	3.45
Indiana	392	130	380	734	527	2.13	2.31	2.50	2.64
Kentucky	195	110	221	156	159	*4.65	2.73	2.58	2.00
Louisiana	12,052	9,140	11,211	11,217	8,790	*9.25	8.46	7.13	9.45
Maine	290	290	330	185	376	5.17	4.48	4.35	6.91
Maryland + D.C.	185	300	313	221	461	*3.61	2.00	4.15	4.54
Massachusetts	338	260	430	288	345	2.17	1.54	4.41	2.11
Michigan	3,879	1,950	3,864	3,795	2,836	4.33	2.56	3.72	4.30
Mississippi	820	540	1,310	1,109	1,096	5.58	5.56	3.60	4.00
New Hampshire	98	160	38	76	41	2.71	1.88	1.25	3.20
New Jersey	341	670	662	694	647	3.30	4.18	5.03	5.74
New York	426	880	867	891	785	1.25	2.04	2.22	1.58
North Carolina	1,097	1,000	1,849	1,498	1,619	*6.01	3.30	4.44	2.84
Ohio	1,144	620	731	855	393	2.67	2.74	2.85	4.53
Pennsylvania	458	550	420	436	574	*2.95	2.54	2.08	2.33
Rhode Island	27	40	76	29	67	--	1/	2.50	2.67
South Carolina	1,002	1,220	951	1,171	1,646	*11.92	4.59	5.08	5.56
Tennessee	431	430	413	485	527	*3.10	2.56	2.73	4.93
Vermont	80	80	57	35	91	9.20	2.50	2.00	2.00
Virginia	528	660	671	772	687	*3.94	3.48	3.69	5.22
West Virginia	32	10	--	18	43	12.00	--	0.50	1.67
Wisconsin	4,676	2,710	3,832	5,631	3,345	*3.76	3.06	3.49	3.35
East. Mgmt. Unit	36,153	28,900	32,531	40,203	34,888	7.54	5.92	5.86	6.14

See footnotes at end of table, page 21

Table 8.--Number of hunters and average season bag of adult waterfowl hunters hunting common snipe,
1964-65 through 1968-69² (continued)

State	Hunters				Average Season Bag					
	1964-65	1965-66	1966-67	1967-68	1968-69	1964-65	1965-66	1966-67	1967-68	1968-69
Arkansas	450	520	256	807	215	12.13	7.69	6.75	7.13	3.50
Colorado	1,444	160	236	234	188	3.56	2.50	3.53	2.08	3.67
Iowa	1,102	820	910	1,600	1,650	*3.40	4.51	4.16	3.47	4.84
Kansas	747	410	781	658	572	6.00	4.15	3.86	3.95	2.81
Minnesota	3,025	2,430	2,260	4,780	2,492	3.52	2.84	3.03	4.94	1.78
Missouri	649	650	478	442	492	5.82	4.46	5.54	4.87	3.17
Nebraska	689	560	466	919	544	*6.20	4.82	3.52	3.64	2.80
New Mexico	27	30	18	51	56	2.00	--	3.00	1.75	1.50
North Dakota	523	480	413	757	1,027	4.15	6.88	4.33	3.69	12.28
Oklahoma	364	250	289	328	223	*7.25	1.60	2.73	2.54	4.00
South Dakota	273	520	225	239	455	3.25	4.42	3.10	7.71	4.38
Texas	2,390	1,730	3,495	2,331	3,154	8.79	6.47	5.95	4.54	5.84
Cent. Mgmt. Unit	10,450	8,590	8,943	13,250	11,320	5.74	4.61	4.29	4.27	4.83
Arizona	133	70	140	45	256	9.00	2.86	4.12	10.00	1.58
California	4,655	4,790	5,485	6,047	7,451	*6.45	6.49	6.30	10.45	7.41
Idaho	204	280	302	527	310	2.20	2.14	3.40	6.11	7.56
Nevada	182	60	203	255	324	5.44	3.33	3.67	7.00	4.21
Oregon	1,379	1,050	854	1,885	1,613	*5.05	4.10	5.29	4.71	5.40
Utah	205	360	556	611	860	1.57	5.28	3.16	2.38	3.35
Washington	2,246	3,120	2,545	3,023	2,700	5.60	4.78	7.66	6.94	5.92
West. Mgmt. Unit	9,004	9,730	9,233	12,393	13,517	5.83	5.47	5.92	7.17	6.11
Total U.S.	55,607	47,220	50,707	65,846	59,725	6.92	5.59	5.63	5.99	5.73

1/ " -- " = No data.

2/ Montana and Wyoming are nonhunt States.

* Adjusted using differences between active and inactive waterfowl hunters in 1965-66.

Table 9.--Number of hunters and average season bag of adult waterfowl hunters hunting sora rails,
1964-65 through 1968-69^{1/}

State	Hunters			Average Season Bag						
	1964-65	1965-66	1966-67	1967-68	1968-69	1964-65	1965-66	1966-67	1967-68	1968-69
Alabama	23	-- 1/	29	77	--	--	7.14	14.24	3.38	3.54
Connecticut	52	140	193	162	184	5.00	3.08	1.25	1.00	2.00
Delaware	--	130	58	46	24	--	8.46	7.58	7.93	2.76
Florida	51.5	260	286	297	364	8.27	5.00	2.00	38.33	--
Georgia	87	50	42	--	73	5.00	--	12.00	--	5.00
Indiana	42	10	16	24	55	--	--	--	--	--
Kentucky	--	20	--	--	--	--	--	--	--	--
Louisiana	1,090	630	946	1,190	378	5.05	5.56	4.17	5.76	4.75
Maine	44	80	14	34	27	27.50	1.25	--	0.50	1.00
Maryland & D.C.	160	300	313	120	83	9.67	12.33	15.77	7.67	8.00
Massachusetts	164	80	89	48	115	4.17	2.50	4.17	1.00	3.33
Michigan	254	130	125	399	126	5.50	0.77	1.25	2.00	1.33
Mississippi	24	20	54	51	--	10.00	--	5.50	5.00	--
New Hampshire	11	60	10	--	x 3/	2.00	5.00	3.00	--	x
New Jersey	864	1,060	854	942	728	7.81	4.62	5.57	4.47	5.04
New York	53	140	139	69	85	--	2.86	5.62	1.33	1.00
North Carolina	280	310	137	107	55	5.14	6.13	3.20	5.00	2.00
Ohio	244	200	122	219	84	5.54	10.00	4.00	4.36	5.67
Pennsylvania	63	40	17	21	95	0.33	--	--	2.00	4.00
Rhode Island	--	20	9	39	67	--	--	2.00	1.25	2.00
South Carolina	149	50	71	253	76	20.50	--	8.67	15.71	2.50
Tennessee	19	40	--	--	--	--	--	--	--	--
Vermont	--	--	x	--	--	--	--	x	--	--
Virginia	510	260	344	331	247	8.50	13.46	12.81	4.94	5.33
West Virginia	32	10	--	--	--	11.00	30.00	--	--	--
Wisconsin	87	40	77	118	--	1.75	25.00	2.50	0.50	--
East. Mgmt. Unit	4,767	4,100	4,160	4,659	2,920	6.92	6.24	8.20	4.81	3.98

See footnotes at end of table, page 23

Table 9.--Number of hunters and average season bag of adult waterfowl hunters hunting sora rails,
1964-65 through 1968-69 ^{2/}(continued)

State	Hunters				Average Season Bag					
	1964-65	1965-66	1966-67	1967-68	1968-69	1964-65	1965-66	1966-67	1967-68	1968-69
Arkansas	--	--	--	53	--	--	--	--	2.00	--
Colorado	57	10	28	--	21	3.00	--	2.00	--	0.00
Kansas	294	130	178	36	133	6.67	1.54	3.00	--	1.25
Minnesota	116	110	305	322	177	2.25	0.91	1.40	6.83	2.00
Missouri	283	300	260	295	206	3.92	12.67	3.09	11.60	7.00
Nebraska	91	20	--	54	34	2.00	--	--	--	1.00
New Mexico	--	10	--	13	--	--	--	--	1.00	--
Oklahoma	52	70	--	60	31	3.00	1.43	--	4.00	1.00
Texas	129	210	169	98	297	27.75	2.38	7.00	7.00	3.50
Cent. Mgmt. Unit	1,086	960	894	978	931	7.00	2.19	3.07	6.61	3.40
Arizona	25	--	x	--	--	--	--	x	--	--
California	224	120	x	218	107	1.20	0.83	x	2.75	2.50
Idaho	--	80	x	--	--	--	1.25	x	--	--
Nevada	--	20	x	--	--	--	--	x	--	--
Oregon	32	--	x	--	--	--	--	x	--	--
Utah	45	20	x	--	--	--	10.00	x	--	--
Washington	146	260	x	--	--	--	1.92	x	--	--
West. Mgmt. Unit	472	500	x	218	107	0.57	1.80	x	2.75	2.50
Total U.S.	6,325	5,560	5,208	5,855	3,958	6.46	5.61	7.36	4.96	3.86

^{1/} "—" = No data.

^{2/} States with closed seasons not shown, but reported data are included in Unit totals.

^{3/} "x" = No open season.

Table 10.--Number of hunters and average season bag of adult waterfowl¹ hunters hunting rails (other than sora), 1964-65 through 1968-69²/

State	Hunters				Average Season Bag					
	1964-65	1965-66	1966-67	1967-68	1968-69	1964-65	1965-66	1966-67	1967-68	1968-69
Alabama	69	30	29	39	374	1.00	3.33	1.00	1.00	3.80
Connecticut	75	100	91	175	117	5.00	5.12	2.92	1.57	1.57
Delaware	131	70	29	91	96	1.00	1.43	1.50	4.33	6.25
Florida	343	340	512	1,110	1,241	3.38	7.06	11.52	7.92	6.09
Georgia	114	90	99	126	338	10.33	4.44	17.14	3.00	17.07
Indiana	70	30	33	-- 1/	55	0.67	3.33	9.50	--	1.50
Kentucky	--	20	--	--	27	--	--	--	--	15.00
Louisiana	1,889	1,050	1,844	4,556	2,740	4.83	5.24	7.66	9.16	4.93
Maine	70	60	43	34	53	5.67	--	1.67	0.50	1.00
Maryland + D.C.	64	130	96	221	230	5.00	3.08	25.25	14.40	1.58
Massachusetts	164	130	114	16	161	3.80	0.77	4.11	--	2.83
Michigan	318	130	94	368	296	2.15	--	1.67	1.09	0.67
Mississippi	73	80	82	206	--	1.67	6.25	3.33	3.71	--
New Hampshire	23	70	29	15	--	2.00	5.71	0.67	1.00	x 3/
New Jersey	1,435	1,180	1,516	1,611	997	6.02	3.98	6.54	6.40	1.83
New York	240	230	243	160	203	2.75	3.04	4.38	2.14	2.14
North Carolina	517	410	183	171	531	15.85	7.32	15.00	21.67	10.32
Ohio	244	180	104	60	--	3.00	2.22	1.40	2.00	--
Pennsylvania	94	70	52	60	141	1.80	--	0.33	1.50	1.83
Rhode Island	27	20	28	68	67	6.00	--	12.33	1.86	2.50
South Carolina	308	100	190	665	842	10.20	17.50	25.57	32.55	19.52
Tennessee	--	40	--	--	43	--	--	--	--	17.00
Vermont	--	--	x	--	18	--	--	x	--	--
Virginia	223	260	218	460	576	14.50	13.08	20.28	14.79	17.67
West Virginia	32	--	--	--	--	3.00	--	--	--	--
Wisconsin	260	90	77	149	72	4.00	5.56	10.50	1.60	0.00
East. Mgmt. Unit	6,868	5,020	5,557	10,415	9,283	5.84	5.20	8.88	9.20	7.38

Table 10.--Number of hunters and average season bag of adult waterfowl hunters hunting rails (other than sora), 1964-65 through 1968-69^{2/} (continued)

State	Hunters				Average Season Bag					
	1964-65	1965-66	1966-67	1967-68	1968-69	1964-65	1965-66	1966-67	1967-68	1968-69
Arkansas	--	--	--	--	--	--	--	--	--	--
Colorado	57	30	28	20	21	2.67	--	1.50	5.00	1.00
Kansas	136	80	223	--	34	0.67	--	4.33	--	1.00
Minnesota	116	116	110	61	445	2.00	1.82	2.00	1.60	1.20
Missouri	120	120	65	30	77	5.25	3.33	3.67	--	5.00
Nebraska	68	80	19	81	67	1.00	2.50	4.00	2.50	3.50
New Mexico	--	10	9	--	14	--	--	1.00	--	1.00
Oklahoma	18	80	--	--	95	--	1.25	--	--	1.67
Texas	517	210	451	197	474	5.08	2.38	5.00	3.75	3.75
Cent. Mgmt. Unit	1,121	870	779	596	1,228	3.38	2.41	3.84	2.54	2.75
Arizona	25	--	x	22	21	1.00	--	x	1.00	4.00
California	224	60	x	218	163	2.00	1.67	x	3.50	0.67
Idaho	--	80	x	28	--	--	7.50	x	4.00	--
Nevada	--	20	x	--	--	--	5.00	x	--	--
Oregon	32	40	x	40	33	--	--	x	14.50	0.00
Utah	--	20	x	38	--	--	--	x	2.00	--
Washington	143	240	x	109	106	25.00 ^{4/}	--	x	1.33	0.33
West. Mgmt. Unit	424	460	x	455	323	1.12	1.74	x	0.88	0.88
Total U.S.	8,413	6,350	6,459	11,466	10,834	5.29	4.57	8.28	8.77	6.83

1/ "—" = No data.

2/ States with closed seasons not shown, but reported data are included in Unit totals.

3/ "x" = No open season.

4/ Not used (single respondent).

Table 11.--Number of hunters and average season bag of adult waterfowl hunters hunting gallinules,
1964-65 through 1968-69²⁷

State	Hunters				Average Season Bag					
	1964-65	1965-66	1966-67	1967-68	1968-69	1964-65	1965-66	1966-67	1967-68	1968-69
Alabama	46	--	1/	--	39	75	5.00	--	--	4.00
Connecticut	--	40	23	12	50	--	--	1.50	5.00	1.00
Delaware	66	70	29	--	24	15.00	5.71	1.00	--	--
Florida	938	490	512	594	513	9.81	9.39	8.96	7.10	5.67
Georgia	114	30	28	--	--	4.00	--	30.00	--	--
Indiana	28	10	99	24	139	--	--	5.50	--	1.40
Kentucky	--	20	--	26	--	--	--	--	--	--
Louisiana	654	630	897	981	187	7.23	7.62	5.83	8.50	7.50
Maine	--	60	29	34	--	--	13.33	1.50	1.00	--
Maryland + D.C.	57	60	48	20	--	5.00	13.33	12.00	--	--
Massachusetts	27	50	13	96	--	1.00	--	1.00	1.17	--
Michigan	127	130	63	61	126	2.75	--	0.50	--	1.00
Mississippi	--	60	54	26	--	--	21.67	2.00	9.00	--
New Hampshire	--	40	29	x	3/	--	--	2.33	x	--
New Jersey	302	300	278	173	268	11.00	5.33	7.33	2.17	2.50
New York	53	50	35	137	58	2.00	--	2.00	2.50	3.00
North Carolina	163	170	46	64	27	3.25	2.94	2.00	76.00	1.00
Ohio	162	200	104	80	84	0.83	1.00	2.83	1.75	2.00
Pennsylvania	126	70	--	78	71	1.86	--	--	3.00	5.00
Rhode Island	27	--	19	--	17	--	--	8.00	--	0.00
South Carolina	129	80	47	95	--	1.00	20.00	17.50	1.00	--
Tennessee	--	90	--	35	--	--	1.11	--	10.00	--
Vermont	--	--	x	18	--	--	--	x	2.00	--
Virginia	38	60	62	36	27	--	3.33	2.75	--	1.00
West Virginia	--	--	--	--	--	--	--	--	--	--
Wisconsin	173	40	--	59	36	1.57	17.50	--	2.50	0.00
East. Mgmt. Unit	3,230	2,750	2,278	2,715	1,703	6.50	6.40	6.64	6.34	3.63

See footnotes at end of table, page 27

Table 11.--Number of hunters and average season bag of adult waterfowl hunters hunting gallinules,
1964-65 through 1968-69²/ (continued)

State	Hunters				Average Season Bag			
	1964-65	1965-66	1966-67	1967-68	1964-65	1965-66	1966-67	1967-68
Arkansas	--	--	--	--	53	--	--	--
Colorado	35	30	28	x	4.00	--	3.00	--
Kansas	68	50	--	38	100	6.00	--	x
Minnesota	47	220	61	322	--	3.00	1.36	8.33
Missouri	65	--	--	58	--	0.67	--	--
Nebraska	--	20	--	108	34	--	--	--
New Mexico	--	10	--	26	14	--	--	--
Oklahoma	18	40	--	--	--	--	--	--
Texas	65	140	11.2	4.9	176	4.00	5.71	4.00
Cent. Mgmt. Unit	342	630	201	678	377	3.74	1.90	2.57
Arizona	25	20	--	--	20.00	--	--	--
California	224	120	503	653	277	2.60	10.00	5.50
Idaho	--	60	--	34	--	--	--	--
Nevada	--	50	68	70	--	8.00	2.00	1.33
Oregon	--	--	--	40	33	--	--	8.00
Utah	--	20	--	--	42	--	--	--
Washington	--	200	--	37	70	--	--	--
West. Mgmt. Unit	249	470	402	800	456	4.34	3.40	4.69
Total U.S.	3,821	3,850	2,881	4,193	2,536	6.11	5.30	6.17

1/ "..." = No data.

2/ States with closed seasons not shown, but reported data are included in Unit totals.

3/ "x" = No open season.

Table 12.--Number of hunters and average season bag of adult waterfowl hunters hunting white-winged doves, 1966-67 through 1968-69^{1/}

State	Hunters			Average Season Bag		
	1966-67	1967-68	1968-69	1966-67	1967-68	1968-69
New Mexico	333	331	311	13.66	17.04	21.86
Texas	11,445	10,060	9,055	20.25	18.85	12.18
Cent. Mgmt. Unit	11,778	10,391	9,407	19.23	18.72	13.43
Arizona	4,050	4,541	4,034	22.04	25.80	21.54
California	10,569	10,954	7,621	9.96	15.35	9.50
Nevada	360	534	370	13.23	8.45	5.50
West. Mgmt. Unit	14,983	16,029	12,064	16.43	19.89	15.91
Total U.S.	26,761	26,420	21,471	17.37	19.36	15.06

^{1/} Only data from hunting States are included.

Table 13.--Number of hunters and average season bag of adult waterfowl hunters hunting band-tailed pigeons, 1966-67 through 1968-69 ^{1/}

State	Hunters			Average Season Bag		
	1966-67	1967-68	1968-69	1966-67	1967-68	1968-69
California	11,374	10,134	11,290	10.08	8.87	8.97
Oregon	5,993	7,116	5,542	8.19	8.63	8.45
Washington	9,190	6,194	8,101	7.91	7.61	9.83
Pacific States	26,557	23,444	24,869	8.58	8.45	8.90
New Mexico	x 2/	x	99	x	x	2.28
Arizona	x	x	597	x	x	3.68
Interior States	x	x	696	x	x	3.40
Total U.S.	26,557	23,444	25,565	8.58	8.45	8.83

^{1/} Only data from hunting States are included.

^{2/} "x" = No open season.

Table 14.--Common snipe hunting by adult waterfowl hunters in Alaska,
1965-66 through 1968-69

<u>Year</u>	<u>Pot. adult WF Hunters</u>	<u>Other mig. game bird hunters</u>	<u>Snipe hunters</u>	<u>Average Season Bag</u>	<u>Harvest</u>
1965-66	9,244	416	317	8.84	2,802
1966-67	10,473	1,322	301	4.42	1,330
1967-68	10,130	959	306	4.83	1,477
1968-69	12,320	1,284	451	6.55	2,955

Table 15.--Little brown crane harvest by adult waterfowl hunters, 1966-67
through 1968-69

<u>State</u>	<u>1966-67</u>	<u>1967-68</u>	<u>1968-69</u>
<u>Alaska</u>			
Average season bag	0.79	0.68	1.23
Hunters	562	718	297
Harvest	443	490	366
<u>New Mexico</u>			
Average season bag	-- <u>1/</u>	-- <u>2/</u>	3.71
Hunters	--	--	218
Harvest	--	--	811
<u>Texas</u>			
Average season bag	--	1.88	1.06
Hunters	--	624	653
Harvest	--	1,170	690
<u>Colorado</u>			
Average season bag	x <u>3/</u>	-- <u>2/</u>	-0-
Hunters	x	--	26
Harvest	x	--	-0-
<u>North Dakota</u>			
Average season bag	x	x	0.43
Hunters	x	x	39
Harvest	x	x	17
<u>South Dakota</u>			
Average season bag	x	x	-0-
Hunters	x	x	-0-
Harvest	x	x	-0-

1/ " -- " = No data.

2/ Question not asked on questionnaires to these States in 1967-68.

3/ "x" = No open season.

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